

## CLAIMS

What is claimed is:

1. A multi-layer lamination comprising:  
a core sandwiched between a first oriented plastic layer and a second oriented plastic layer wherein the orientations of the plastic layers cross at an angle between but not equal to zero degrees and 180 degrees relative to one another.
2. The multi-layer film in accordance with claim 1 wherein the orientation of the first plastic layer is an angle selected between 20 degrees and 70 degrees relative to the core and the orientation of the second plastic layer, relative to the core, is an angle that is complimentary to the angle of the first plastic layer.
3. The multi-layer film in accordance with claim 2 wherein where the first and second layers cross at an angle of about ninety degrees to one another.
4. The multi-layer film in accordance with claim 1 wherein the first and second plastic layers are polyolefins.
5. The multi-layer film in accordance with claim 4 wherein the polyolefin is polyethylene.
6. The multi-layer film in accordance with claim 1 further comprising a bonding media disposed between the plastic layers and the core.
7. The multi-layer film in accordance with claim 1 wherein the core is paperboard.
8. A method of forming a multi-layer lamination comprising the steps of: applying a first oriented plastic layer and a second oriented plastic layer to opposite sides of a core layer where the orientations of the first and second layers cross at an angle between but not equal to zero degrees and 180 degrees relative to one another.

9. The method in accordance with claim 8 wherein the first plastic layer is applied at an orientation angle between 20 degrees and 70 degrees relative to the core and second plastic layer is applied at an orientation angle, relative to the core, that is complimentary to the angle of the first plastic layer.

10. The method in accordance with claim 9 wherein the layers are applied at an orientation of about ninety degrees to one another.

11. The method in accordance with claim 8 wherein the first and second plastic layers are applied to the core by extrusion lamination.

12. The method in accordance with claim 8 wherein the first and second oriented plastic layers are applied to the core simultaneously.

13. The method in accordance with claim 8 wherein the first and second plastic layers are applied to the core by adhesive lamination.

14. The method in accordance with claim 8 wherein the core is paperboard.

15. A method of improving tear resistance in a multi-layer lamination comprising the steps of:

orienting a first plastic layer while applying it to a first side of a core;  
orienting a second plastic layer while applying it to a second side of the core, the orientation of the first plastic layer being at a ninety degree angle to the orientation of the second plastic layer.

16. The method in accordance with claim 15 wherein the core is paperboard.

17. A method of improving tear resistance in a multi-layer lamination comprising the steps of:

orienting a first plastic layer while applying it to a first side of a core;

orienting a second plastic layer while applying it to a second side of the core, the first and second plastic layers being oriented in substantially opposite directions so as to offset propagation of a tear through the core.

18. The method in accordance with claim 17 wherein the core is paperboard.